Jeremy J. Tejada, PhD

Contact Information

SIMCON Solutions LLC
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Career Objectives

To examine and solve complex problems in a wide range of industries using simulation modeling and analysis, optimization, advanced analytics, and operations research techniques.

Education

North Carolina State University (NCSU), Raleigh, NC
PhD in Industrial and Systems Engineering, June 2012, GPA: 4.0/4.0
Duel Minor in Operations Research and Statistics
Dissertation: *An Integrated Discrete-Event/System Dynamics Simulation Model of Breast Cancer Screening for Older US Women* [Dissertation]
Advisers: Dr. James R. Wilson & Dr. Julie S. Ivy
Research Interests: Simulation with applications in healthcare and other areas, design of complex simulation models, statistics, operations research, simulation consulting

Masters of Industrial and Systems Engineering, December 2009, GPA: 4.0/4.0

Texas Tech University (TTU), Lubbock, TX
Bachelor of Science in Industrial Engineering, May 2008
Summa Cum Laude, GPA: 3.97/4.0
Minor in Mathematics

Professional Experience

President and Founder May 2013 – Present
SIMCON Solutions LLC, Dallas, TX
SIMCON Solutions, LLC has a core focus in utilizing simulation modeling, statistical modeling, data analysis, and custom engineering software development to solve complex problems for clients in a number of different industries. [Company Profile]

- Services Offered: simulation modeling and analysis, statistical modeling and analysis, general engineering consulting, software development, and technical oversight
- Company Roles: lead engineer / developer, creative director, project manager, and business development
- Industries: manufacturing, healthcare, nuclear safety, oil and gas, pharmaceuticals, mining, printing, and others
- Project Examples:
  - Design and implementation of a fully integrated simulation-based scheduling solution for a plastic compounds manufacturer
  - Development of a simulation model for inventory management and product flow optimization for a construction equipment manufacturer
  - Enfacement of an existing simulation model for an advanced prescription order fulfillment and sortation system used to optimize system configuration and define control algorithms for a pharmaceutical distribution company
  - Development of a custom simulation platform for determining power plant failure frequencies for a partner engineering consulting firm
  - Simulation modeling, programming, and statistical analysis support for numerous risk management projects at various nuclear power plants
  - Development of a simulation model with complex 3D animation for visualizing a prospective open-pit mining process and supply chain used to solicit stakeholder buy-in for a large mining corporation
  - Statistical modeling and analysis for predicting landslide-initiated pipeline rupture risk for an Ohio valley oil and gas company

Postdoctoral Research Associate July 2012 – July 2016
University of Texas at Austin, Austin, TX
Research assistant for South Texas Project (STP) working on resolution of Generic Safety Issue 191 (GSI-191).

- Simulation modeling and statistical analysis for numerous aspects Loss of Coolant Accidents (LOCA) at nuclear facilities.
- Worked as part of a multidisciplinary project team with team members from many fields of engineering and power plant management personnel.
- Presented and defended analyses to the Nuclear Regulatory Commission (NRC)

Independent Contractor September 2012 – May 2013
Jeremy J. Tejada, Austin, TX
Consultant for simulation projects in the healthcare, mining, and other industries.

- Simulation modeling and analysis for MOSIMTEC, LLC

Consultant July 2011 – April 2012
NCSU Industrial Extension Service (IES), Raleigh, NC
Worked on several industrial engineering projects with local companies and other NCSU departments.

- Linamar Project: We determined the optimal layout and operational setup for a manufacturing facility that did not yet exist, using simulation as a tool for analysis.
- Cummins Project: We developed extensive documentation of the client's changeover procedures for training purposes. Using video-based time studies, we created standard operating procedures and work flows for all machine changeovers, eliminating unnecessary steps to minimize changeover time and effort. No previous changeover documentation existed.

Summer Intern May 2008 – July 2008
Xerox Corporation: Xerox Innovation Group, Rochester, NY

- Contributed a patent to the development of Lean Document Production (LDP), a specialized simulation decision making software tool for the printing industry.
- Obtained Yellow Belt in Lean Six Sigma.

Patents

Tejada, J. J. and S. Rai, "Method and System for Determining Batch Sizes for Print Jobs in a Print Production Environment," U.S. Patent, 2011/0002004 A1, July 1, 2009. [Patent]

Software Experience

Simulation Software: Simio, Arena, Simul8, Crystal Ball, Simulation Studio (SAS)
Programming Languages: C++, C#, .NET, Visual Basic, VBA, Matlab, Mathmatica
Statistical Packages: R, SAS, JMP, Minitab, StatFit, ExpertFit
Software Development: Tortoise SVN, Bugzilla, Git Repositories
Design: Autodesk Inventor

Research Experience

Doctoral Dissertation Research August 2008 – June 2012
NCSU Industrial and Systems Engineering Department (ISE), Raleigh, NC

- Objective: Develop, validate, and exploit a simulation modeling framework for evaluating the effectiveness of breast cancer screening policies for US women who are at least 65 years old over the period 2012–2020. This includes an examination of key components in the breast cancer screening process for older women, and an approach to defining and modeling those components using simulation.
- Interdisciplinary Component: Communicated with members of the health care community for general guidance, data gathering assistance, and expert elicitations for breast cancer related simulation issues when data were unavailable.
- Key Contributions: A comprehensive tool for quantitatively evaluating the impacts of alterative breast cancer screening policies on US women. The integration discrete-event simulation and system dynamics into a single modeling environment, and the development of a new simulation validation procedure are also contributions to the science of simulation modeling.

Research Assistant August 2008 – May 2009
NCSU Industrial and Systems Engineering Department (ISE), Raleigh, NC

- Modeled progression of colon cancer to determine optimal screening policies.
- Debugged and verified simulation model and interpreted results.

Research Assistant August 2006 – July 2007
TTU Industrial Engineering Department, Lubbock, TX

- Located the optimal extraction point in cottonseed oil production process for conversion to biodiesel.
- Calibrated and used water brake engine dynamometer, designed piping and filtration housing, and collected and analyzed data.

Teaching Experience

Instructor August 2011 – May 2012
NCSU ISE Department, Raleigh, NC
A Preparing the Professoriate (PTP) fellowship provided the following teaching opportunities:

- Co-instructor for ISE 441: Introduction to Simulation (Fall 2011)
  Overall Teaching Effectiveness: 4.6/5.0
- Primary instructor ISE 441 (Spring 2012)
  Overall Teaching Effectiveness: 4.7/5.0
- Certificate of Accomplishment in Teaching
- Attended teaching seminars to improve teaching effectiveness
- Online Teaching Portfolio: http://jjtejadateachingportfolio.wordpress.com

Teaching Assistant August 2009 – Present
NCSU ISE Department, Raleigh, NC
Assisted undergraduate and graduate students with class material, held weekly office hours, designed and graded homework, and lectured on occasion.

- ISE 311 - Engineering Economy (Summer I 2012)
- ISE 762 - Computer Simulation Techniques (Fall 2009, Fall 2010, & Fall 2011)
- ISE 441 - Introduction To Simulation (Spring 2010, Spring 2011, & Fall 2011)
- ISE 723 - Production Planning, Scheduling, and Inventory Control (Spring 2010)

Tutor August 2007 – December 2007
TTU College of Engineering, Lubbock, TX
Assisted other engineering students in completing homework assignments and preparing for exams.

Grant Writing Experience

Tejada, J.J. (PI), Agency for Healthcare Research and Quality (AHRQ) R36 Dissertation Grant, "An Integrated Discrete-Event/Systems Dynamics Simulation Model of Breast Cancer Screening for Elderly U.S. Women", Submitted May 1, 2011, considered but not funded.

Tejada, J.J. (PI), National Science Foundation (NSF) Graduate Research Fellowship, "Development of a Combined Discrete-Event/Systems Dynamics Simulation Model of the Breast Cancer Screening and Treatment Process", Submitted December 1, 2009, awarded honorable mention but not funded.

Tejada, J.J. (PI), National Science Foundation (NSF) Graduate Research Fellowship, "Resolution of Hospital Delays with a Pre-Built High-Level Model & Stochastic Simulation", Submitted December 1, 2007, awarded honorable mention but not funded.

Publications

Peer-Reviewed Journal Articles:

Tejada, J. J., Ivy, J., Wilson, J., Diehl, K., Yankaskas, B. C., Ballan, M. J. (2015). Combined DES/SD Model of Breast Cancer Screening for Older Women, I: Natural History Simulation. *IIE Transactions*, 47:6, 600-619, DOI: 10.1080/0740817X.2014.959671. [Journal Article] [Online Supplement]

Tejada, J. J., Ivy, J., Wilson, J., King, R., Kay, M., Ballan, M. J., Diehl, K., Yankaskas, B. C. (2014). Combined DES/SD Model of Breast Cancer Screening for Older Women, II: Screening-and-Treatment Simulation. *IIE Transactions*, 46:7, 707-727, DOI: 10.1080/0740817X.2013.851436. [Journal Article] [Online Supplement] [IIE Magazine Article]

Tejada, J. J., Ballan, M.J., Ivy, J., Wilson, J., King, R. (2014). Calibration, Validation, and Analysis of a Combined DES/SD Model of Breast Cancer Screening for Older Women. Working Paper. [Working Paper]

Peer-Reviewed Conference Proceedings:

Mokashi, A. C., J.J. Tejada, S. Yousefi, T. Xu, J.R. Wilson, and A. Tafazzoli. (2010). Performance Comparison of MSER-5 and N-SKART on the Simulation Start-Up Problem. In *Proceedings of the 2010 Winter Simulation Conference*, ed B. Johansson, S. Jain, J. Montoya-Torres, J. Hugan, and E. Yücesan, 1–12. Piscataway, New Jersey: Institute of Electrical and Electronics Engineers. [Conference Proceeding]

Tejada, J. J., Ballan, M. J., Wilson, J., Ivy, J., Kay, M., King, R., Diehl, K., Yankaskas, B. C. (2013). Combined DES/SD Model of Breast Cancer Screening for Older Women: An Overview. *Proceedings of the 2013 Winter Simulation Conference*. [Conference Proceeding]

Mohaghegh, Z., Kee, E., Reihani, S. A., Kazemi, R., Jonhson, D., Grantom, R., Fleming, K., Sande, T., Letellier, B., Zigler, G., Morton, D., Tejada, J., Howe, K., Leavitt, J., Hassan, Y. A., Vaghetto, R., Lee, S., and Blossom, S. (2013). Risk-Informed Resolution of Generic Safety Issue 191. *2013 International Topical Meeting on Probabilistic Safety Assessment and Analysis*. [Conference Proceeding]

Morton, D. P., Letellier, B., Tejada, J., Johnson, D., Mohaghegh, Z., Kee, E., Reihani, S., and Zolan, A. (2014). Sensitivity Analyses for a High-Order Simulation Used in the STP GSI-191 Risk-Informed Resolution Project. *Proceedings of 2014 22nd International Conference On Nuclear Engineering*. [Conference Proceeding]

Technical Reports:

Collins, T.R., J.L. Simonton, P. Kiererleber, K. Jones, J.P. Jones, L. Patviviatisiri, J.C. Collins, J.J. Tejada, and P. Hunter. (2008). Economic Analysis and Feasibility of Cottonseed Oil as a Biodiesel Feedstock. Contributed to *Center for Engineering, Logistics, and Distribution (CELDI)*, Project Number 1316-C059. Texas Tech University, Industrial Engineering Department, Lubbock, TX. [Report]

Tejada, J. J., and Morton, D. P. (2012). *South Texas Project Risk-Informed GSI-191 Evaluation*: CHLE Tank Test Results for Blended and NEI Fiber Beds with Aluminum Addition: Correlated Control Charts for Head Loss Response to Aluminum Addition. Technical Report, STP-RIGSI191-V03.03, The University of Texas at Austin. [Report]

Tejada, J. J. (2013). South Texas Project Risk-Informed GSI-191 Evaluation: Water Chemistry Sensitivity Analysis: Effect on Penetration. Technical Report, STP-RIGSI191-V03.04, The University of Texas at Austin. [Report]

Tejada, J. J., Ogden, N., and Morton, D. P. (2013). South Texas Project Risk-Informed GSI-191 Evaluation: Filtration as a Function of Debris Mass on the Strainer: Fitting a Parametric Physics-Based Model. Technical Report, STP–RIGSI191–V03.06, The University of Texas at Austin. [Report]

Tejada, J. J., and Morton, D. P. (2013). South Texas Project Risk-Informed GSI-191 Evaluation: Sump Temperature as a Function of Time and Break Size. Technical Report, STP-RIGSI191-V03.07, The University of Texas at Austin. [Report]

Tejada, J. J., Pan, Y. A., Morton, D. P. (2013). South Texas Project Risk-Informed GSI-191 Evaluation: Means of Aggregation and NUREG-1829: Geometric and Arithmetic Means. Technical Report, STP-RIGSI191-ARAI.01, The University of Texas at Austin. [Report]

Morton, D. P., Tejada, J. J., and Zolan, A. (2013). South Texas Project Risk-Informed GSI-191 Evaluation: A Practical Guide to Sensitivity Analysis of a Large-scale Computer Simulation Model. Technical Report, STP-RIGSI191-ARAI.02, The University of Texas at Austin. [Report]

Morton, D. P., Tejada, J. J., and Zolan, A. (2013). South Texas Project Risk-Informed GSI-191 Evaluation: Stratified Sampling in Monte Carlo Simulation: Motivation, Design, and Sampling Error. Technical Report, STP-RIGSI191–ARAI.03, The University of Texas at Austin. [Report]

Morton, D. P., Popova, I., Tejada, J. J. (2013). A Hybrid Approach to Modeling LOCA Frequencies and Break Sizes for the GSI-191 Resolution Effort at Calvert Cliffs. Technical Report, Proximira Inc., Austin TX, and SIMCON Solutions LLC, Dallas, TX. [Report]

Morton, D. P., Popova I., Tejada, J. J. (2013). A Hybrid Approach to Modeling LOCA Frequencies and Break Sizes for the GSI-191 Resolution Effort at Vogtle. Technical Report, Proximira Inc., Austin TX, and SIMCON Solutions LLC, Dallas, TX. [Report]

Hasenbein, J. J., Tejada, J. J., and Zolan, A. (2015). South Texas Project Risk-Informed GSI-191 Evaluation: Fiber Diffusion Operations Engine. Technical Report 2015-002, The University of Texas at Austin. [Report]

Hasenbein, J. J., Tejada, J. J., and Zolan, A. (2015). South Texas Project Risk-Informed GSI-191 Evaluation: Risk Unifying Frequency Functional. Technical Report 2015-003, The University of Texas at Austin. [Report]

Blossom, S., Kee, E., Hasenbein, J. J., et al. (2015). STPNOC RoverD: Risk over Deterministic GSI-191 Assessment. White Paper submitted to the Nuclear Regulatory Commission, South Texas Nuclear Operating Company. [White Paper]

Presentations

Oral Presentations:
"An Integrated Discrete-Event/Systems Dynamics Simulation Model of Breast Cancer Screening for Elderly U.S. Women," INFORMS Annual Meeting, Austin, TX, November 7, 2010.

Invited Seminars:
North Carolina State University, Raleigh, NC, Healthcare Engineering Seminar, "An Integrated Discrete-Event/Systems Dynamics Simulation Model of Breast Cancer Screening for Elderly U.S. Women," October 2010.

Poster Presentations with Published Abstracts:
"An Integrated Discrete-Event/Systems Dynamics Simulation Model of Breast Cancer Screening for Elderly U.S. Women," Winter Simulation Conference, Phoenix, AZ, December 12, 2011. [Poster]

Honors & Awards

NCSU

- Preparing the Professoriate Fellowship Program (2011–2012)
- Certificate of Accomplishment in Teaching (2012)
- NSF Graduate Fellowship - Honorable Mention (2010)
- Deans Fellowship for Industrial Engineering (2008–2009)

TTU

- NSF Graduate Fellowship - Honorable Mention (2008)
- Don-Kay-Clay Cash Foundation Honors Endowed Scholarship in Industrial Engineering (2007–2008)
- Industrial Engineering Departmental Academic Achievement Scholarship (2007–2008)
- Undergraduate Collegiate Scholarship (2005–2008)

Memberships & Activities

Tau Beta Pi (Inducted 2007)
Alpha Pi Mu (Inducted 2007)
Institute of Industrial Engineers (2007–Present)
INFORMS (2010–Present)
INFORMS Simulation Society (2010–Present)
Raleigh Vipers Rugby (2009–2013)

References

Dr. Ricki Ingalls
Principal, Diamond Head Associates
Cell Phone: (405) 612-4111
Email: ricki.ingalls@diamond-head-associates.com
Relationship: Partner for Various Simulation, Scheduling, and Optimization Projects
Number of Years Known: 2

Jim Page
Vice President, Manner Polymers
Office Phone: (469) 422-6702
Cell Phone: (972) 839-3954
Email: JPage@mannerpolymers.com
Relationship: Client for Multi-Phase Simulation Scheduling Project
Number of Years Known: 1

Dr. Bruce C. Letellier
Principal Scientist, Alion Science and Technology
Cell Phone: (505) 412-5270
Email: bletellier@alionscience.com
Relationship: Client for Numerous Risk Informed Simulation Projects for Nuclear Safety
Number of Years Known: 6

Ernie Kee
Founder and President, YK Risk LLC
Consulting Engineer, South Texas Nuclear Operating Company
Cell Phone: (979) 479-2312
Email: erniekee@gmail.com
Relationship: Client for Numerous Risk Informed Simulation Projects for Nuclear Safety
Number of Years Known: 6

Martin Franklin
Founder and Partner, MOSIMTEC LLC
Cell Phone: (571) 213-1008
Work Phone: (571) 766-8020
Email: martin@mosimtec.com
Relationship: Client for Multiple Simulation Consulting Projects
Number of Years Known: 6

Dr. James R. Wilson
Professor, Edward P. Fitts Department of Industrial and Systems Engineering, North Carolina State University
Office Phone: (919) 515-2362
Cell Phone: (919) 606-4031
Email: jwilson@ncsu.edu
Relationship: Doctoral Dissertation Advisor and Teaching Mentor
Number of years known: 10

Dr. David P. Morton
Professor, Department of Industrial Engineering & Management Sciences, Northwestern University
Office Phone: (847) 467-2996
Cell Phone: (919) 554-3314
Email: david.morton@northwestern.edu
Relationship: Postdoctoral Project Supervisor
Number of years known: 6